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Published in:
 Groninger Arbeiten zur germanistischen Linguistik

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
 Publisher's PDF, also known as Version of record

Publication date:
 2010

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Berends, S., Veenstra, A., & van Hout, A. (2010). "Nee, ze heeft er twee": Acquisition of Dutch quantitative 'er'. *Groninger Arbeiten zur germanistischen Linguistik*, 51, 1-7. <https://ugp.rug.nl/GAGL/article/view/31082>

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Nee, ze heeft er twee:* acquisition of the Dutch quantitative *er

Sanne Berends¹, Alma Veenstra^{1,2, 3}, and Angeliek van Hout¹

¹ University of Groningen

²Max Planck Institute for Psycholinguistics, Nijmegen

³International Max Planck Research School for Language Sciences, Radboud University Nijmegen

1. Introduction

We present the first study on the acquisition of the Dutch quantitative pronoun *er* in sentences such as *de vrouw draagt er drie* ‘the woman is carrying three.’ There is a large literature on Dutch children’s interpretation of pronouns and a few recent production studies, all specifically looking at 3rd person singular pronouns and the so-called Delay of Principle B effect (Coopmans & Philip, 1996; Koster, 1993; Spenader, Smits and Hendriks, 2009). However, no one has studied children’s use of quantitative *er*. Dutch is the only Germanic language with such a pronoun.

Our investigation of the production of quantitative *er* in 5-year-old Dutch children is part of a large cross-linguistic project, referred to as COST Action 33.¹ Dutch quantitative *er* was tested along with partitive clitic *en* in French, *ne* in Italian, and *ne* in Catalan which have a similar function (Gavarró et al, in prep.). Dutch is the only language of these four in which the partitive word is a pronoun rather than a clitic.

We compare Dutch data from two production tasks—elicited production vs. repetition—and discuss to what extent 5-year-olds have acquired quantitative *er*. We critically examine the two methods and conclude that a repetition task is superior to an elicitation task, since the latter allows for too much variation in the output. We give various suggestions how to improve the repetition task so that it may be developed into a true test of quantitative *er*.

2. Quantitative *er* and other types of *er* in Dutch

The Dutch pronoun *er* is syntactically well documented (Bech, 1952; Bennis, 1980; 1986; Bouma, 1999; Campbell-Kibler, 2001; Van de Visser, 2002). While linguists still debate the exact syntax of *er*, they agree that there are four different types: i) existential or expletive *er*, ii) prepositional *er*, iii) locative *er*, and iv) quantitative *er*.

Our study focuses on quantitative *er*, or *Q-er*, as in (1a).

- (1) a. Ik heb *(er) gisteren twee gekocht.
I have Q-*er* yesterday two bought
‘I bought two (of them) yesterday’

¹ This research is part of the EU-funded COST A33 project “Crosslinguistically Robust Stages of Children’s Linguistic Performance, with Applications to the Diagnosis of Specific Language Impairment” (P.I. U. Sauerland, 2006-2010). Researchers from twenty-five European countries participate. The goal is to provide a cross-linguistically uniform picture of 5-year-olds’ knowledge of grammar, which can serve as the basis for further research into clinical markers for the detection of SLI. The COST research themes include pronouns, quantification, implicatures, passives, tense and aspect, and questions.

<http://www.zas.gwz-berlin.de/index.php?id=47&L=1>

- b. * Ik heb *er* gisteren twee boeken gekocht.
 I have Q-*er* yesterday two books bought

Quantitative *er* is an anaphoric pronoun and requires a previous discourse with an antecedent which licenses it. Q-*er* is obligatory whenever a subject or object noun phrase occurs without a head noun and is modified by a numeral. Leaving out *er* in (1a) results in ungrammaticality. Q-*er* is in complementary distribution with the head noun; doubling is ungrammatical, (1b). In order to capture the connection between the absent noun and Q-*er*, Barbiers (2009) proposes the syntactic analysis of Q-*er* in (2).

(2) [DP₁ D1 [QP₂ Q2 [DP₂ D2 [NP]]]]

Q-*er* is the spell-out of DP₂ and obligatorily moves out of the VP in a scrambling operation. Barbiers presents evidence that the Q-*er* construction does not contain an ellipsis site in the NP (*contra* Corver et al., 2009), nor does it involve pronominalization of partitive PP ‘of them’ (*contra* Coppin, 1991).

3. Pronoun acquisition

In our study we investigate whether Q-*er* is acquired by 5-year-olds. Given the absence of acquisition studies on this particular pronoun, we frame our study against the object pronoun literature.

Spenader et al. (2009) designed a pronoun elicitation task (in parallel with a comprehension task) to study the Pronoun Interpretation Problem (also known as the Delay of Principle B effect). In the co-referential condition the children often correctly produced reflexive pronouns. For situations with disjoint reference 4 to 6-year old children prefer to produce full noun phrases over object pronouns, despite the explicit mention of an antecedent in the introductory sentence which makes a pronoun felicitous. This finding suggests a pronoun-avoidance strategy, possibly because children want to be as clear as possible in marking referents and full noun phrases are most informative.

Many studies on Romance languages find that children initially omit clitics; this was found for indirect object clitics (Gavarró & Mosella, 2009) and direct object clitics (Guasti, 2002; Jakubowicz, Nash, Rigaut & Gerard, 1998; Pirvulescu, 2006; Wexler, Gavarró & Torrens, 2004). These studies show that omission is a way to deal with clitic constructions that are too difficult (either not yet acquired or too hard to process). Spenader et al.’s (2009) pronoun production study of Dutch does not report any pronoun omission. This may be because the children in these studies were older than the children in the clitic studies.

If children have not yet acquired the Q-*er* construction, they must find a way around it. One option is to use a pronoun-avoidance strategy and produce full noun phrases, like Spenader et al.’s participants in the object pronoun task, who were of a similar age as our participants. Another option is to omit the pronoun, like young Romance learners do with object clitics.

We probed Dutch children’s acquisition of Q-*er* with two different methods: elicited production and repetition. In principle, a repetition task is much easier than an elicitation task. If children do not yet have the Q-*er* construction, they will not produce any *er* pronouns in the elicitation task, while they may be able to repeat them (sometimes) in the repetition task. On the other hand, if 5-year-olds master the construction, we expect them to be at ceiling in the repetition task, and pretty good in

the elicitation task as well. If 5-year-olds indeed master *Q-er*, we can ask how well each of our two methods can establish this.

4. Two experiments with quantitative *er*

We tested 29 typically developing children aged between 5;2 and 6;1 (mean age 5;8). The children were given two tasks—an elicitation task and a repetition task—in two separate sessions; the sessions were a few days up to a week apart. All children did the repetition task in the first session and the elicitation task in session 2. A group of adult control participants was also tested ($n = 15$).

The tasks consist of the Dutch adaptations of the tasks developed by Gavarró et al (in prep.). The repetition task consisted of a collection of short stories that the experimenter read to the child. The children were asked to repeat every last sentence, which contained a *Q-er* construction. For example, there is a story about a boy and a girl in a sweet shop, thinking of buying some sweets. The sweets are the antecedent introduced in the discourse, allowing a *Q-er* construction. The child had to repeat the last sentence, (3). There were twelve test items and five fillers (without *Q-er*) in this task.

- (3) De jongen koopt *er* twee.
 The boy buys *Q-er* two
 ‘The boy buys two (of them).’

The elicitation task was disguised as a guessing game. The child had a pile of cards with pictures and held them up one by one. The experimenter could not see the picture, but on the back of each card part of the picture was shown so the experimenter could make a guess about the picture. The experimenter would then guess how many objects were on the picture. When she guessed incorrectly, the child had to provide the correct answer using a *Q-er* construction. There were twelve test items and ten filler items; for the filler items the experimenter made correct guesses.

One of the pictures is illustrated in Figure 1. The experimenter proposed the guess in (4). The target answer was a *Q-er* construction as in (5).

- (4) Exp: Neemt ze drie koffers mee?
 Takes she three suitcases with?
 ‘Does she take three suitcases?’
- (5) Child: Nee, ze neemt *er* twee mee.
 No, she takes *Q-er* two with
 ‘No, she takes two (of them).’



Figure 1 One picture in the elicitation task (Gavarró et al., in prep)

Note that the experimenter's guess introduces the antecedent (here, suitcases) and thus licenses the replacement of the noun in an *Q-er* construction.

In order to focus on the production of *Q-er*, the elicitation task had a training session with four practice items. If participants did not produce the target *Q-er* in the training, the experimenter provided a *Q-er* construction and explicitly told them that this was an alternative, shorter way of answering. During the test the experimenter did not correct participants anymore. Because *Q-er* only occurs in sentences with a verb, the children were stimulated to produce full clauses. Throughout the test, when necessary, the experimenter provided the subject of the sentence, which the participants then had to complete.

The adults scored at ceiling in both tasks, repeating and producing *Q-er* 100% of the time. The children on the other hand were not at ceiling for either of the tasks. In the repetition task, they correctly repeated the *Q-er* 80.7% of the time ($\mu = 9.9$; $sd = 1.9$), see Figure 2. The errors (18%) practically all involved *er*-omission (1% gave an answer including a full noun phrase or used a non-target pronoun).

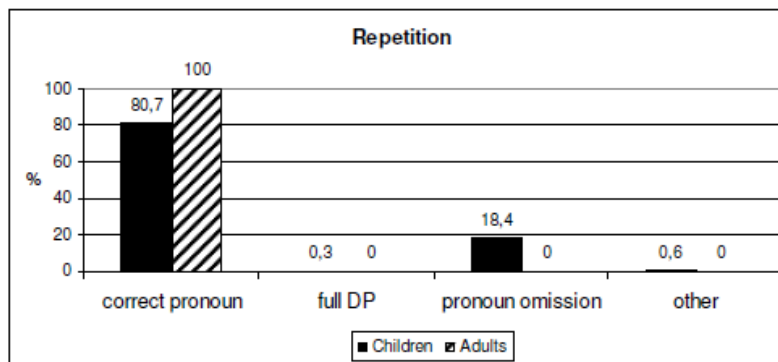


Figure 2: Results *Q-er* repetition task

Looking at the individual subject scores, we counted for each child how often *Q-er* was correctly produced; this is shown in Table 1.

Table 1: Number of children who produced *Q-er* (maximum = 12)

# Target <i>Q-er</i>	# Children
11, 12	13
8, 9, 10	11
7 or fewer	5

The subject analysis in Table 1 reveals that there is a wide variation across children. About half the children are at ceiling in this task, while the rest occasionally omitted *Q-er*, sometimes even more than half of the time.

In the elicitation task, many responses consisted of a single numeral (*nee, twee* ‘no, two’), a noun phrase with a numeral (*nee, twee koffers* ‘no, two suitcases’), or simply *nee* ‘no.’ We discarded these responses (145 out of a total of 348) because they had no verb, and hence did not provide a proper syntactic context for *Q-er*. Figure 3 illustrates the analysis of the remaining 203 responses, which all contained a verb.

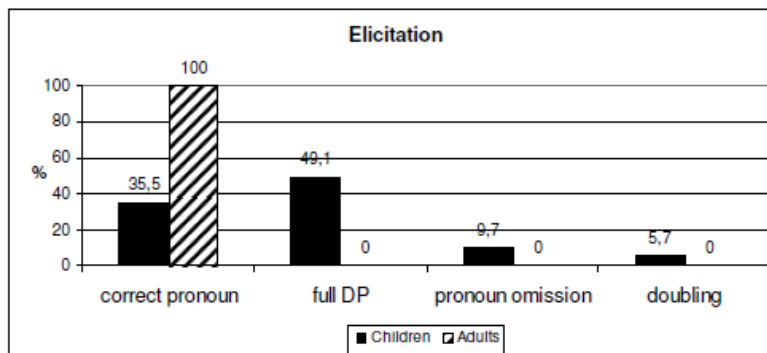


Figure 3: Results *Q-er* elicitation task

The results on the elicitation task were dramatically low. Only 35.5% of the responses contained a target *Q-er* ($\mu = 2.7$; $sd = 3.7$). Many answers contained a full noun phrase instead (49.1%). This response is grammatically correct and felicitous in the context of the experiment. This means that a total of 75% responses was in fact correct, even if they did not all have the target construction. There were two types of ungrammatical responses: *Q-er* omission illustrated in (6) (9.7%), and a few cases of *er*-doubling constructions (5.7%), see (7).²

- (6) * Hij heeft twee.
he has two
‘He has two (of them).’
- (7) * Hij heeft er drie paarden.
he has *Q-er* three horses
‘He has three horses.’

The elicitation task triggered a large number of full noun phrase responses, despite the explicit training with *Q-er*. Such responses are fully grammatical and felicitous, however, so we must conclude that the elicitation task did not fulfil its goal.

² Some answers contained an *er* of another type, an existential one (*Er zijn drie vissen* ‘There are three fish.’). This indicates that the child was able to produce the pronoun *er*, even if she did not always use it in the target *Q-er* construction.

5. Discussion and conclusions

Our goal was to find out whether 5-year-olds have acquired the quantitative *er* construction. Judging by the results of the repetition task, most children seem to have acquired it. However, the results of the elicitation task are not equally clear. Which of the two methods is most appropriate for testing the acquisition of quantitative *er*?

We favor repetition over elicitation. The large number of full NPs in the elicitation task might be taken as evidence for an avoid-pronoun strategy. Yet we hesitate to draw this conclusion, since full NPs are equally felicitous in the discourse context of this task. We conclude rather that the elicitation task is too free as it allows for another possible answer other than the target Q-*er*: a full noun phrase.

A possible objection to the repetition task, however, is that it is too easy to simply repeat a short sentence. Does correct repetition of Q-*er* reflect actual parsing and then re-production of the Q-*er* construction? Or can the task be done by simply relying on phonetic memory, i.e., simply parroting?

Table 1 shows that there was a large subject variation in the repetition task with more than half the children omitting Q-*er* 3 or more times out of 12, while the remaining children produced it on target 11/12 or 12/12 times. This shows clearly that the Q-*er* construction is not yet fully acquired by all children at the age of 5. The fact that more than half did not repeat Q-*er* shows that simple repetition was not too easy a task. Still, we admit that we cannot be sure if the children who repeated Q-*er* well, did so because they have indeed acquired it, or because they have a good memory. In order to control for this effect the task should be improved and structurally vary sentence length and sentence complexity across items.

Why would Q-*er* be relatively hard to acquire? We can think of two reasons. First, there are four different types of pronoun *er*, each with its own syntax and semantics. The child's challenge is to tease them all apart, and this might take a while. Second, quantitative *er* involves a sophisticated construction. It occurs at the left edge of the VP after scrambling and relates to a headless NP with a numeral. Children seem to have problems with its obligatory nature, as they sometimes omit Q-*er* and sometimes produce it.

We conclude that the acquisition of Q-*er* can be tested with a repetition task. However, further research is needed to improve this task. It needs to be ensured that good performance is not based on working memory alone.

Acknowledgments

This work forms part of a larger study on partitive clitics and pronouns as developed in Gavarró, et al (in prep.). The quantitative *er* experiment was designed and developed by Anna Gavarró, Laurie Tuller and Maria Teresa Guasti. We thank the audiences at the COST A33 Final Conference *Let the children speak*, the TiN dag 2010 at the University of Utrecht and the Acquisition Lab at the University of Groningen for their questions and feedback.

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